

Toothed belt axes EGC-HD-TB, with heavy-duty guide

FESTO



Electromechanical drives

Selection aid

FESTO

Overview of toothed belt and spindle axes

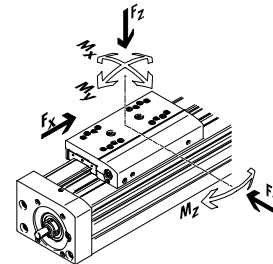
Toothed belt axes

- Speeds of up to 10 m/s
- Acceleration of up to 50 m/s²
- Repetition accuracy of up to ±0.08 mm
- Strokes of up to 8500 mm (longer strokes on request)
- Flexible motor mounting

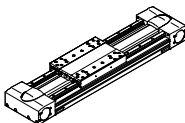
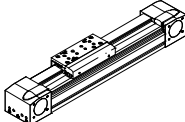
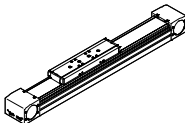
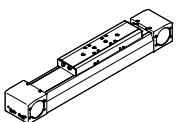
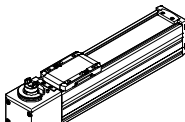
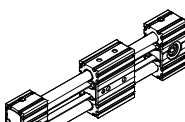
Spindle axes

- Speeds of up to 2 m/s
- Acceleration of up to 20 m/s²
- Repetition accuracy of up to ±0.003 mm
- Strokes of up to 3000 mm

Coordinate system



Toothed belt axes

Type	F_x [N]	v [m/s]	M_x [Nm]	M_y [Nm]	M_z [Nm]	Key features
Heavy-duty recirculating ball bearing guide						
EGC-HD-TB						
	450	3	140	275	275	• Flat drive unit with rigid, closed profile • Precision DUO guide rail with high load capacity • Ideal as a basic axis for linear gantries and cantilever axes
	1000	5	300	500	500	
	1800	5	900	1450	1450	
Recirculating ball bearing guide						
EGC-TB-KF						
	50	3	3.5	10	10	• Rigid, closed profile • Precision guide rail with high load capacity • Small drive pinions reduce required driving torque • Space-saving position sensing
	100	5	16	132	132	
	350	5	36	228	228	
	800	5	144	680	680	
	2500	5	529	1820	1820	
ELGA-TB-KF						
	350	5	16	132	132	• Internal guide and toothed belt • Precision guide rail with high load capacity • Guide and toothed belt protected by cover strip • High feed forces
	800	5	36	228	228	
	1300	5	104	680	680	
	2000	5	167	1150	1150	
ELGA-TB-KF-F1						
	260	5	16	132	132	• Suitable for use in the food zone • “Clean Look”: smooth, easy to clean surfaces • Internal guide and toothed belt • Precision guide rail with high load capacity • Guide and toothed belt protected by cover strip
	600	5	36	228	228	
	1000	5	104	680	680	
ELGC-TB-KF						
	75	1.2	5.5	4.7	4.7	• Internal guide and toothed belt • Precision guide rail with high load capacity • Guide and toothed belt protected by cover strip
	120	1.5	29.1	31.8	31.8	
	250	1.5	59.8	56.2	56.2	
ELGR-TB						
	50	3	2.5	20	20	• Cost-optimised rod guide • Ready-to-install unit • Ball bearings with high load capacity for dynamic operation
	100	3	5	40	40	
	350	3	15	124	124	

Electromechanical drives

Selection aid

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Overview of toothed belt and spindle axes

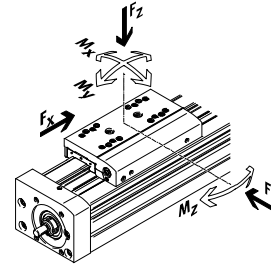
Toothed belt axes

- Speeds of up to 10 m/s
- Acceleration of up to 50 m/s²
- Repetition accuracy of up to ±0.08 mm
- Strokes of up to 8500 mm (longer strokes on request)
- Flexible motor mounting

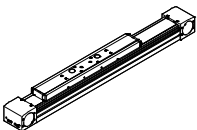
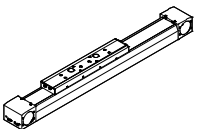
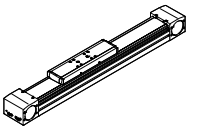
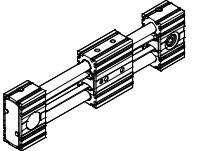
Spindle axes

- Speeds of up to 2 m/s
- Acceleration of up to 20 m/s²
- Repetition accuracy of up to ±0.003 mm
- Strokes of up to 3000 mm

Coordinate system



Toothed belt axes

Type	F_x [N]	v [m/s]	M_x [Nm]	M_y [Nm]	M_z [Nm]	Key features
Roller bearing guide						
ELGA-TB-RF						
	350	10	11	40	40	• Heavy-duty roller bearing guide • Guide and toothed belt protected by cover strip • Speeds of up to 10 m/s • Lower weight than axes with guide rails
	800	10	30	180	180	
	1300	10	100	640	640	
ELGA-TB-RF-F1						
	260	10	8.8	32	32	• Suitable for use in the food zone • “Clean Look”: smooth, easy to clean surfaces • Heavy-duty roller bearing guide • Guide and toothed belt protected by cover strip • Lower weight than axes with guide rails
	600	10	24	144	144	
	1000	10	80	512	512	
Plain-bearing guide						
ELGA-TB-G						
	350	5	5	30	10	• Guide and toothed belt protected by cover strip • For simple handling tasks • As a drive component for external guides • Insensitive to harsh operating conditions
	800	5	10	60	20	
	1300	5	120	120	40	
ELGR-TB-GF						
	50	1	1	10	10	• Cost-optimised rod guide • Ready-to-install unit • Heavy-duty plain bearings for use in harsh operating conditions
	100	1	2.5	20	20	
	350	1	1	40	40	

Electromechanical drives

Selection aid

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Overview of toothed belt and spindle axes

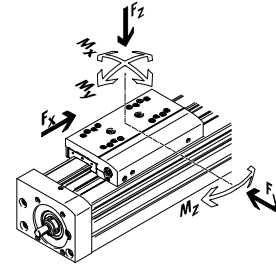
Toothed belt axes

- Speeds of up to 10 m/s
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- Repetition accuracy of up to ±0.08 mm
- Strokes of up to 8500 mm (longer strokes on request)
- Flexible motor mounting

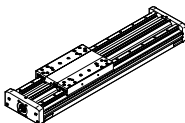
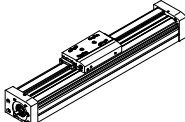
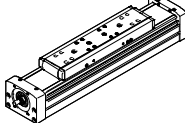
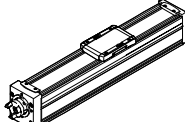
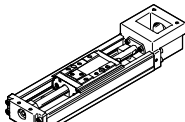
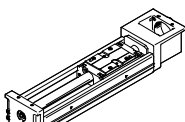
Spindle axes

- Speeds of up to 2 m/s
- Acceleration of up to 20 m/s²
- Repetition accuracy of up to ±0.003 mm
- Strokes of up to 3000 mm

Coordinate system



Spindle axes

Type	F_x [N]	v [m/s]	M_x [Nm]	M_y [Nm]	M_z [Nm]	Key features
Heavy-duty recirculating ball bearing guide						
EGC-HD-BS						
	300	0.5	140	275	275	• Flat drive unit with rigid, closed profile • Precision DUO guide rail with high load capacity • Ideal as a basic axis for linear gantries and cantilever axes
	600	1.0	300	500	500	
	1300	1.5	900	1450	1450	
Recirculating ball bearing guide						
EGC-BS-KF						
	300	0.5	16	132	132	• Rigid, closed profile • Precision guide rail with high load capacity • For the highest requirements in terms of feed force and accuracy • Space-saving position sensing
	600	1.0	36	228	228	
	1300	1.5	144	680	680	
	3000	2.0	529	1820	1820	
ELGA-BS-KF						
	300	0.5	16	132	132	• Internal guide and ball screw • Precision guide rail with high load capacity • For the highest requirements in terms of feed force and accuracy • Guide and ball screw protected by cover strip • Space-saving position sensing
	600	1.0	36	228	228	
	1300	1.5	104	680	680	
	3000	2.0	167	1150	1150	
ELGC-BS-KF						
	40	0.6	1.3	1.1	1.1	• Internal guide and ball screw • Guide and ball screw protected by cover strip • Space-saving position sensing
	100	0.6	5.5	4.7	4.7	
	200	0.8	29.1	31.8	31.8	
	350	1.0	59.8	56.2	56.2	
EGSK						
	57	0.33	13	3.7	3.7	• Spindle axes with maximum precision, compactness and rigidity • Recirculating ball bearing guide and ball screw without caged ball bearings • Standard designs in stock
	133	1.10	28.7	9.2	9.2	
	184	0.83	60	20.4	20.4	
	239	1.10	79.5	26	26	
	392	1.48	231	77.3	77.3	
EGSP						
	112	0.6	36.3	12.5	12.5	• Spindle axes with maximum precision, compactness and rigidity • Recirculating ball bearing guide with caged ball bearings • Ball screw sizes 33, 46 with caged ball bearings
	212	0.6	81.5	31.6	31.6	
	466	2.0	90.3	32.1	32.1	
	460	2.0	258	94	94	

Toothed belt axes EGC-HD-TB, with heavy-duty guide

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Key features

At a glance

- New heavy-duty guide for:
 - Maximum loads and torques
 - High feed forces and speeds
 - Long service life
- Precision, resilient DUO guide rail
- Ideal as a basic axis for linear gantries and cantilever axes
- In addition to its technical data, the toothed belt axis also offers an excellent price/performance ratio
- Space-saving position sensing with proximity sensor in the profile slot
- Wide range of options for mounting on drives

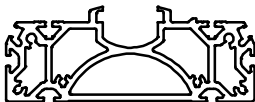
Flexible motor mounting

The motor position can be freely selected on four sides and can be changed at any time.

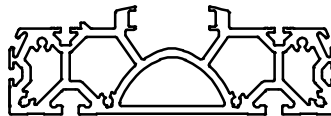


Flat unit with rigid, closed profile

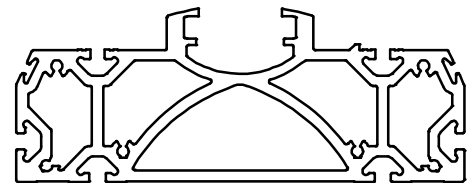
EGC-HD-125



EGC-HD-160



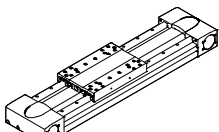
EGC-HD-220



Characteristic values of the axes

The specifications shown in the table are maximum values.

The precise values for each of the variants can be found in the relevant technical data section.

Version	Size	Working stroke	Speed	Repetition accuracy	Feed force	Guide characteristics				
		[mm]	[m/s]	[mm]	[N]	Forces and torques				
						Fy [N]	Fz [N]	Mx [Nm]	My [Nm]	Mz [Nm]
Recirculating ball bearing guide										
	125	50 ... 3000	3	+0.08	450	3650	3650	140	275	275
	160	50 ... 5000	5	+0.08	1000	5600	5600	300	500	500
	220	50 ... 4750	5	+0.1	1800	13000	13000	900	1450	1450

-  - Note

PositioningDrives
sizing software
www.festo.com

Toothed belt axes EGC-HD-TB, with heavy-duty guide

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Key features

Slide variants

Standard slide



Standard slide, protected



With additional slide



Complete system comprising toothed belt axis, motor, motor controller and motor mounting kit

Toothed belt axis with recirculating ball bearing guide



Motor

→ page 24



1



2

1 Servo motor EMME-AS, EMMS-AS

2 Gear unit EMGA



Note

A range of specially adapted complete solutions is available for the toothed belt axis EGC and the motors.

Motor controller

Technical data → Internet: motorcontroller



Servo motor controller
CMMP-AS

Motor mounting kit

→ page 24

Axial kit



Kit comprising:

- Motor flange
- Coupling housing
- Coupling
- Screws

Toothed belt axes EGC-HD-TB, with heavy-duty guide

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Type codes

		EGC	-	HD	-	125	-	500	-	TB	-	50H	-	GK													
Type																											
EGC	Toothed belt axis																										
Guide																											
HD	Heavy-duty guide																										
Size																											
Stroke [mm]																											
Drive function																											
TB	Toothed belt																										
Stroke reserve																											
Slide																											
GK	Standard slide																										
GP	Standard slide, protected																										

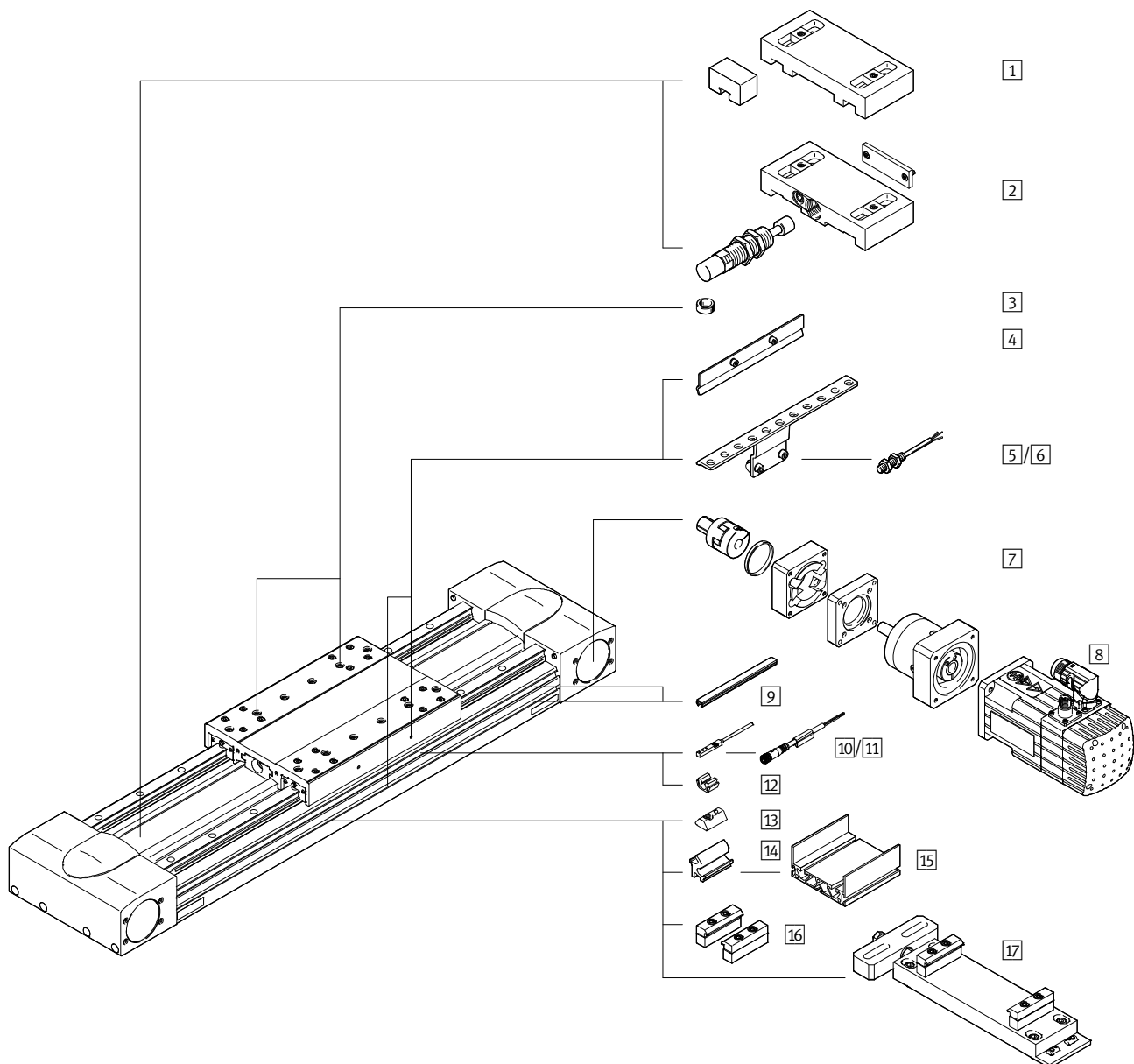


→		-		ZUB -	2MX2Z	-	DN
Additional slide							
KL	Standard, left						
Additional slide							
KR	Standard, right						
Accessories enclosed separately							
...M	Profile mounting						
...B	Mounting slot cover						
...S	Sensor slot cover						
...Y	Slot nut for mounting slot						
...X	Proximity sensor (SIES), inductive, slot type 8, PNP, N/O contact, 7.5 m cable						
...Z	Proximity sensor (SIES), inductive, slot type 8, PNP, N/C contact, 7.5 m cable						
...A	Emergency buffer with retainer						
...C	Shock absorber with retainer						
...O	Proximity sensor (SIEN), inductive, M8, PNP, N/O contact, 2.5 m cable						
...P	Proximity sensor (SIEN), inductive, M8, PNP, N/C contact, 2.5 m cable						
...W	Proximity sensor (SIEN), inductive, M8, PNP, N/O contact, plug M8						
...R	Proximity sensor (SIEN), inductive, M8, PNP, N/C contact, plug M8						
...V	Connecting cable						
...CL	Cable clip						
Operating instructions							
DN	None						

Toothed belt axes EGC-HD-TB, with heavy-duty guide

Peripherals overview

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Toothed belt axes EGC-HD-TB, with heavy-duty guide

Peripherals overview

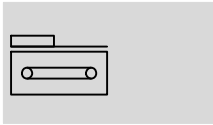
Variants and accessories			
	Type	Description	→ Page/Internet
1	Emergency buffer with retainer A	For avoiding damage at the end stop in the event of malfunction	27
2	Shock absorber with retainer C	For avoiding damage at the end stop in the event of malfunction	27
3	Centring pin/sleeve ZBS, ZBH	- For centring loads and attachments on the slide 2 centring pins/sleeves included in the scope of delivery of the axis	29
4	Switch lug X, Z, O, P, W, R	For sensing the slide position	27
5	Sensor bracket O, P, W, R	Adapter for mounting the inductive proximity sensors (round design) on the axis	27
6	Proximity sensor, M8 O, P, W, R	- Inductive proximity sensor, round design - The order code O, P, W, R includes 1 switch lug and max. 2 sensor brackets	30
7	Axial kit EAMM-A	For axial motor mounting (consisting of: coupling, coupling housing and motor flange)	24
8	Motor EMME, EMMS	Motors specially matched to the axis, with gear unit, with or without brake	24
9	Slot cover B, S	For protecting against the ingress of dirt	29
10	Proximity sensor, T-slot X, Z	- Inductive proximity sensor, for T-slot - The order code X, Z includes 1 switch lug	30
11	Connecting cable V	For proximity sensor (order code W and R)	30
12	Clip CL	For mounting the proximity sensor cable in the slot	29
13	Slot nut Y	For mounting attachments	29
14	Adapter kit DHAM	For mounting the support profile on the axis	35
15	Auflageprofil HMIA	For mounting and guiding an energy chain	35
16	Profile mounting M	For mounting the axis on the profile	25
17	Adjusting kit EADC-E16	Used to mount the axis on a vertical surface. Following mounting, the axis can be aligned horizontally	26

Toothed belt axes EGC-HD-TB, with heavy-duty guide

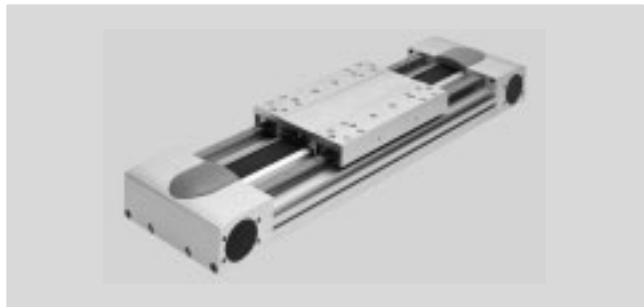
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Technical data

Function



- Ø - Size
125 ... 220
- I - Stroke length
50 ... 5000 mm
- T - www.festo.com



General technical data				
Size		125	160	220
Design		Electromechanical axis with toothed belt		
Guide		Recirculating ball bearing guide		
Mounting position		Any		
Working stroke	[mm]	50 ... 3000	50 ... 5000	50 ... 4750
Max. feed force F_x	[N]	450	1000	1800
Max. no-load torque ¹⁾	[Nm]	1.1	2.1	4.1
Max. no-load resistance to shifting ¹⁾	[N]	67.75	105.5	123.8
Max. driving torque	[Nm]	7.2	20	59.58
Max. speed				
EGC-...-GK	[m/s]	3	5	
EGC-...-GP	[m/s]	–	3	
Max. acceleration	[m/s ²]	40	50	
Repetition accuracy	[mm]	+0.08		+0.1

1) At 0.2 m/s

Operating and environmental conditions		
Ambient temperature	[°C]	–10 ... +60
Protection class		IP40
Duty cycle	[%]	100

Weight [g]			
Size	125	160	220
Basic weight with 0 mm stroke ¹⁾	4720	9050	25510
Additional weight per 10 mm stroke	73	107	210
Slide			
EGC-...-GK	1218	2571	6317
EGC-...-GP	–	2643	6417
Additional slide			
EGC-...-GK	1026	2022	5498
EGC-...-GP	–	2134	5598

1) Incl. slide

Toothed belt axes EGC-HD-TB, with heavy-duty guide

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Technical data

Toothed belt				
Size		125	160	220
Pitch	[mm]	3	5	8
Width	[mm]	30.3	40.0	50.5
Expansion ¹⁾	[%]	0.31	0.23	0.29
Effective diameter	[mm]	32.47	39.79	66.21
Feed constant	[mm/rev.]	102	125	208

1) At max. feed force

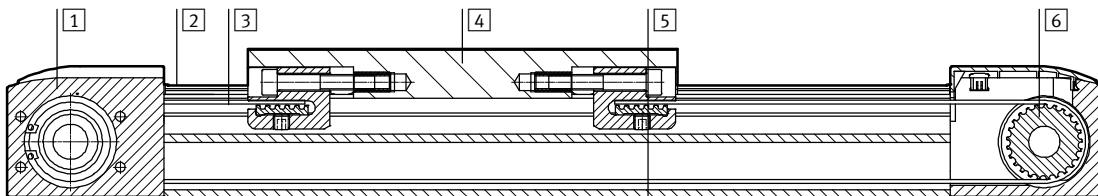
Mass moment of inertia				
Size		125	160	220
J_0	[kg cm ²]	4,639	14.49	108.99
J_S per metre stroke	[kg cm ² /m]	0.38	1.267	6.269
J_L per kg effective load	[kg cm ² /kg]	2.635	3.96	10.96
J_W Additional slide	[kg cm ²]	3.3	11.734	80.66

The mass moment of inertia J_A of the entire axis is calculated as follows:

$$J_A = J_0 + J_W + J_S \times \text{working stroke [m]} + J_L \times m_{\text{effective load [kg]}}$$

Materials

Sectional view



Axis		
1	Drive cover	Anodised wrought aluminium alloy
2	Guide rail	Coated and corrosion-resistant steel
3	Toothed belt	Polychloroprene with glass cord and nylon coating
4	Slide	Anodised wrought aluminium alloy
5	Profile	Anodised wrought aluminium alloy
6	Toothed belt disc	High-alloy stainless steel
Note on materials		Conforms to RoHS
		Contains PWIS (paint-wetting impairment substances)

Toothed belt axes EGC-HD-TB, with heavy-duty guide

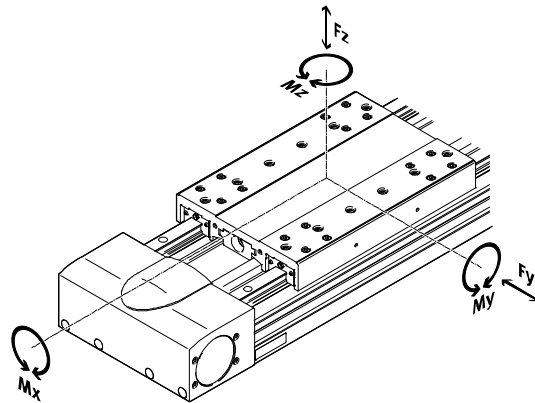
Technical data

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Characteristic load values

The indicated forces and torques refer to the slide surface. The point of application of force is the point where the centre of the guide and the longitudinal centre of the slide intersect.

These values must not be exceeded during dynamic operation. Special attention must be paid to the deceleration phase.



Max. permissible forces and torques for a service life of 5000 km				
Size		125	160	220
Fy _{max.}	[N]	3650	5600	13000
Fz _{max.}	[N]	3650	5600	13000
Mx _{max.}	[Nm]	140	300	900
My _{max.}	[Nm]	275	500	1450
Mz _{max.}	[Nm]	275	500	1450



Note

For a service life of 5000 km for the guide system, the load comparison factor must have a value of $f_v < 1$, based on the maximum permissible forces and torques for a service life of 5000 km.

If the axis is simultaneously subjected to several of the indicated forces and torques, the following equation must be satisfied in addition to the indicated maximum loads:

Calculating the load comparison factor:

$$f_v = \frac{|F_{y,dyn}|}{F_{y,max}} + \frac{|F_{z,dyn}|}{F_{z,max}} + \frac{|M_{x,dyn}|}{M_{x,max}} + \frac{|M_{y,dyn}|}{M_{y,max}} + \frac{|M_{z,dyn}|}{M_{z,max}}$$

Toothed belt axes EGC-HD-TB, with heavy-duty guide

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Technical data

Calculating service life

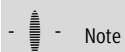
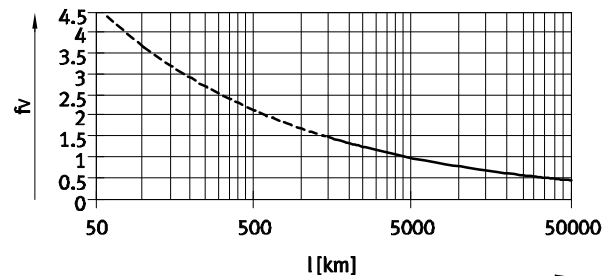
The service life of the guide depends on the load. To provide a rough indication of the service life of the guide, the graph below plots the load comparison factor f_v against the service life.

These values are only theoretical. You must consult your local contact person at Festo for load comparison factors f_v greater than 1.5.

Load comparison factor f_v as a function of service life

Example:

A user wants to move an X kg load. Using the formula → page 12 gives a value of 1.5 for the load comparison factor f_v . According to the graph, the guide would have a service life of approx. 1500 km. Reducing the acceleration reduces the M_z and M_y values. A load comparison factor f_v of 1 now gives a service life of 5000 km.



Note

PositioningDrives
sizing software
www.festo.com

The guide workload for a service life of 5000 km can be calculated with the help of the sizing software.

$f_v > 1.5$ are only theoretical comparison values for the recirculating ball bearing guide.

Comparison of the characteristic load values for 5000 km with dynamic forces and torques of recirculating ball bearing guides

The characteristic load values of roller bearing guides are standardised to ISO and JIS using dynamic and static forces and torques. These forces and torques are based on an expected service life for the guide system of 100 km to ISO or 50 km to JIS.

As the characteristic load values are dependent on the service life, the max. permissible forces and torques for a service life of 5000 km cannot be compared with the dynamic forces and torques of roller bearing guides to ISO/JIS.

To make it easier to compare the guide capacity of linear axes EGC with roller bearing guides, the table below lists the theoretically permissible forces and torques for a calculated service life of 100 km. This corresponds to the dynamic forces and torques to ISO.

These 100 km values have been calculated mathematically and are only to be used for comparing with dynamic forces and torques to ISO. The drives must not be loaded with these characteristic values as this could damage them.

Max. permissible forces and torques for a theoretical service life of 100 km (from a guide perspective only)

Size		125	160	220
$F_{y_{max.}}$	[N]	13447	20631	47892
$F_{z_{max.}}$	[N]	13447	20631	47892
$M_{x_{max.}}$	[Nm]	516	1105	3316
$M_{y_{max.}}$	[Nm]	1013	1842	5342
$M_{z_{max.}}$	[Nm]	1013	1842	5342

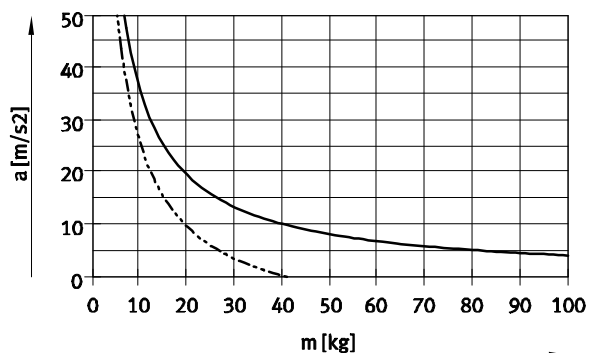
Toothed belt axes EGC-HD-TB, with heavy-duty guide

FESTO

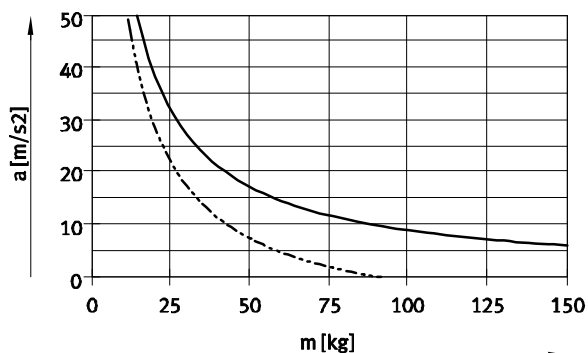
Technical data

Maximum acceleration a as a function of applied load m

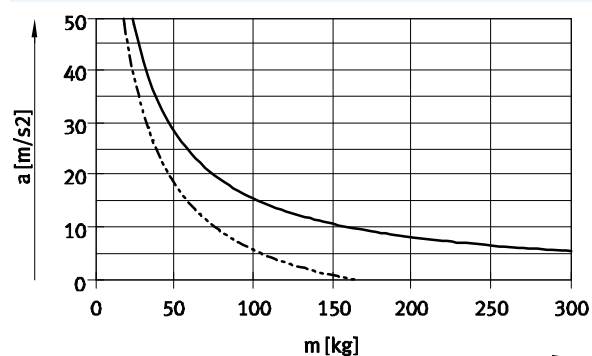
EGC-HD-125



EGC-HD-160

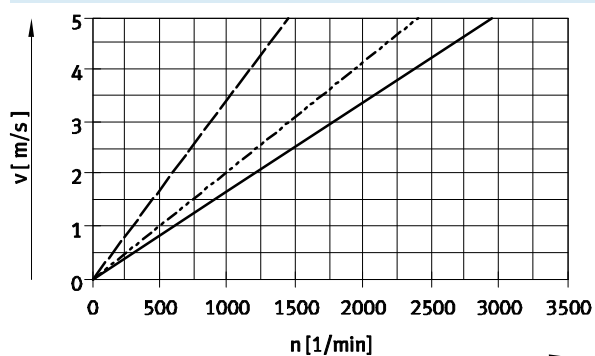


EGC-HD-220



— Horizontal mounting position
- - - Vertical mounting position

Speed v as a function of rotational speed n



— EGC-HD-125
- - - EGC-HD-160
- . - EGC-HD-220

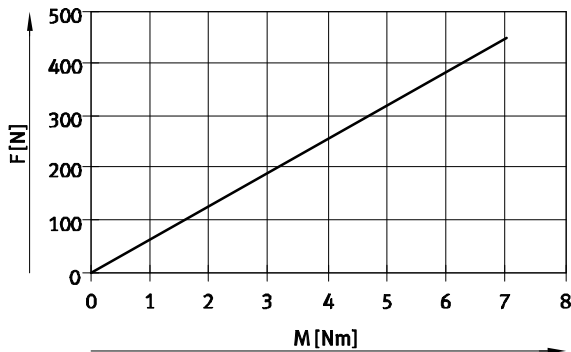
Toothed belt axes EGC-HD-TB, with heavy-duty guide

FESTO

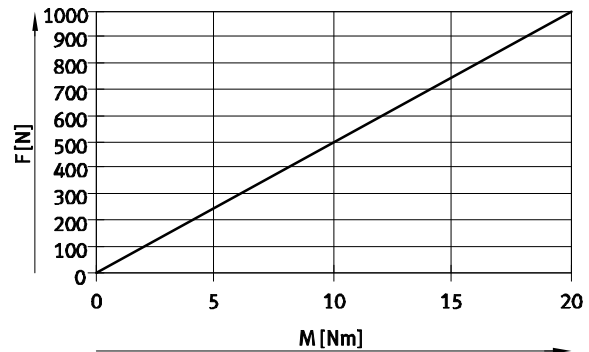
Technical data

Theoretical feed force F as a function of input torque M

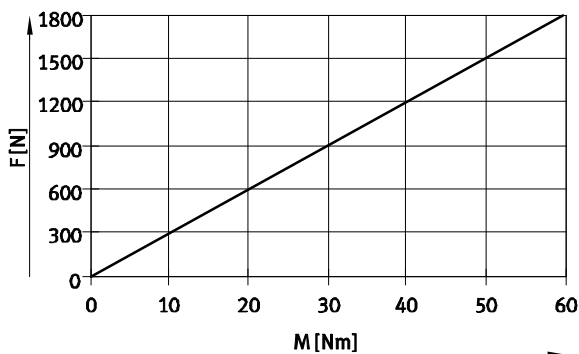
EGC-HD-125



EGC-HD-160



EGC-HD-220



Stroke reserve

Stroke length

The selected stroke corresponds in principle to the required working stroke. The variants GK do not have a long-term lubrication unit on the guide. These variants therefore additionally have a safety distance between the drive cap and slide that is not designated as part of the working stroke.

Stroke reserve

A safety distance (similar to GK) between the drive cap and slide can be defined for the variants GP using the modular product system via the stroke reserve feature. With the variants GK, the stroke reserve and safety distance are added for each end position.

- The stroke reserve length can be freely selected
- The sum of the stroke length and 2x stroke reserve must not exceed the maximum working stroke

Example:

Type:

EGC-HD-125-500-TB-20H-...

Working stroke = 500 mm

2x stroke reserve = 40 mm

Total stroke = 540 mm

(540 mm = 500 mm + 2x 20 mm)

Size	125	160	220
L9 = safety distance with GK [mm] (per end position)	12.5	15.5	20

Toothed belt axes EGC-HD-TB, with heavy-duty guide

FESTO

Technical data

Working stroke reduction

With standard slide GK/GP with additional slide KL/KR

- With a toothed belt axis with additional slide, the working stroke is reduced by the length of the additional slide L17 and the distance between both slides L18
- If the variant GP is ordered, the additional slide is also protected

L16 = Length of slide

L17 = Length of additional slide

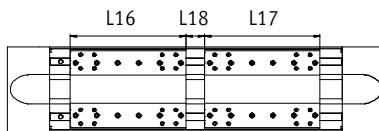
L18 = Distance between both slides

Example:

Type: EGC-HD-220-1000-TB-...-GP-KR

L18 = 100 mm

Working stroke = 1000 mm – 328 mm – 100 mm = 572 mm



Dimensions – Additional slide

Size	125	160	220
Variant	GK	GK	GP
Length L17 [mm]	202	220	250

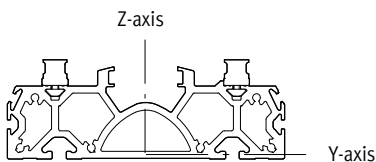
Working stroke reduction per side

With integrated emergency buffer NPE/shock absorber YSRW with shock absorber retainer EAYH-L2

- With a toothed belt axis, the working stroke is reduced by the total dimension of the emergency buffer/shock absorber and shock absorber retainer.

Size	125	160	220
With emergency buffer [mm]	65	93	98
With shock absorber [mm]	66	94	99

Second moment of area



Size	125	160	220
I _y [mm ⁴]	6.89x10 ⁵	12.9x10 ⁵	55.8x10 ⁵
I _z [mm ⁴]	40.9x10 ⁵	98.9x10 ⁵	351x10 ⁵

Toothed belt axes EGC-HD-TB, with heavy-duty guide

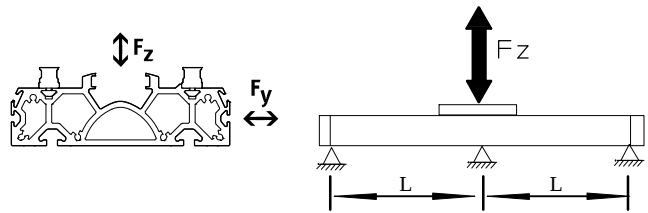
FESTO

Technical data

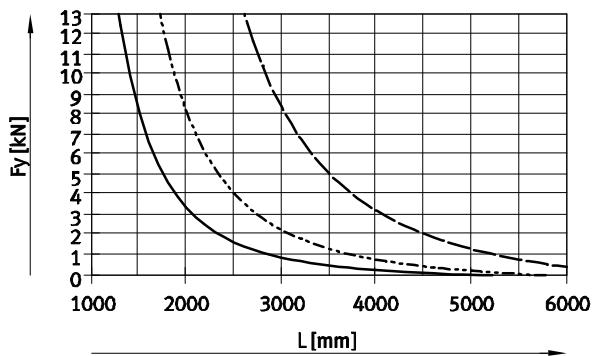
Maximum permissible support spacing L (without profile mounting) as a function of force F

In order to limit deflection in the case of large strokes, the axis may need to be supported.

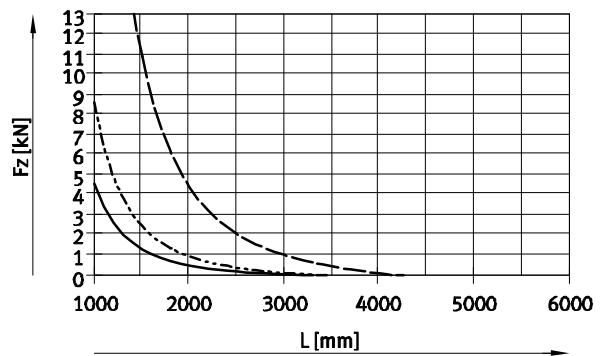
The following graphs help to determine the maximum permissible support spacing L as a function of force F acting on the axis. The deflection is $f = 0.5 \text{ mm}$.



Force Fy



Force Fz



- EGC-HD-125-TB
- - - EGC-HD-160-TB
- · - EGC-HD-220-TB

Recommended deflection limits

Adherence to the following deflection limits is recommended so as not to impair the functional performance of the axes. Greater deformation can result in increased friction, greater wear and reduced service life.

Size	Dyn. deflection (moving load)	Stat. deflection (stationary load)
125 ... 220	0.05% of the axis length, max. 0.5 mm	0.1% of the axis length

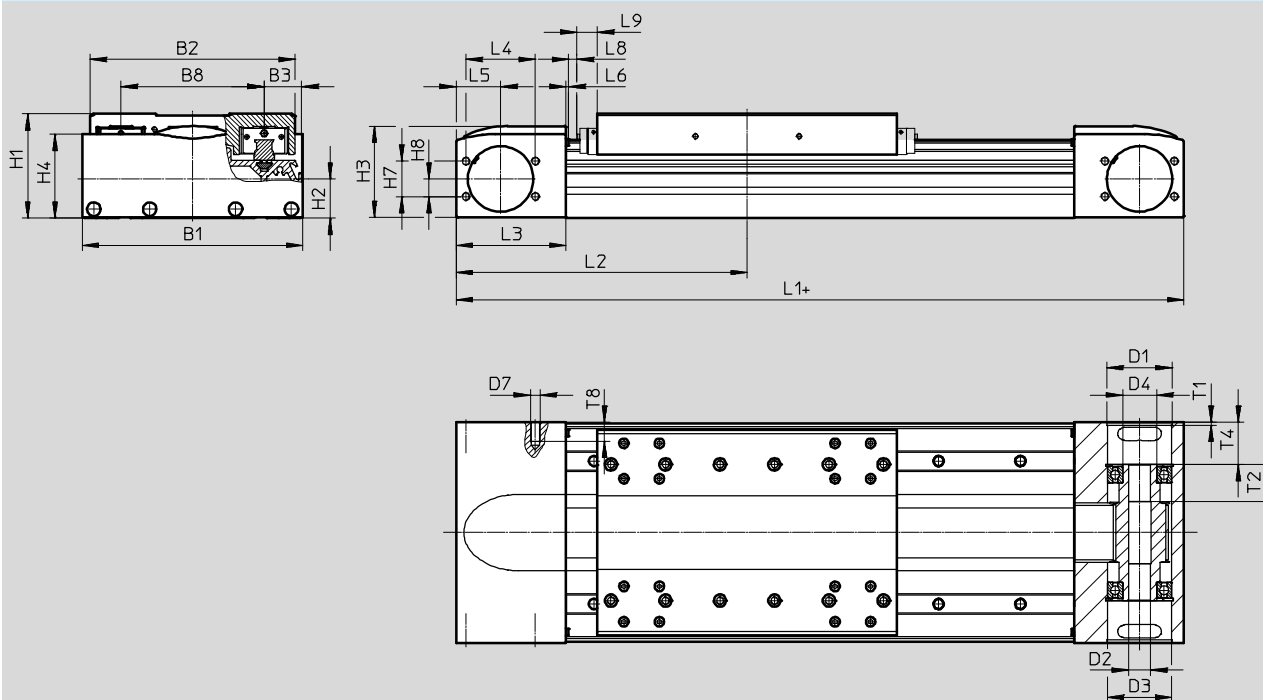
Toothed belt axes EGC-HD-TB, with heavy-duty guide

Technical data

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Dimensions

Download CAD data → www.festo.com



+ = plus stroke length + 2x stroke reserve

L9 With GP: dimension for long-term lubrication unit → page 15

Size	B1	B2	B3	B8	D1 Ø H7	D2 Ø H7	D3 Ø	D4 Ø	D7
125	124	120	21	80	43	16	42	25	M6
160	162	150.7	27.5	105	48	16	47	25	M6
220	224	204.2	40	140	80	23	75	45	M8

Size	H1	H2	H3	H4	H7	H8	L1	L2 min.	L3
125	64	26.1	55.8	50.8	24	12	346	173	57.5
160	76.5	28.7	67.5	61.5	26	13	417	208.5	80.5
220	111.5	45.2	98	91.1	59	27	576	288	115

Size	L4	L5	L6	L8	L9	T1	T2	T4	T8
125	46	27.5	1.8	2	–	2.1	27	23.65	13
160	51	32.5	2	0.55	14.9	3.1	27	31.1	14
220	76	50	2	2	18	3.1	29.5	47.5	16

Toothed belt axes EGC-HD-TB, with heavy-duty guide

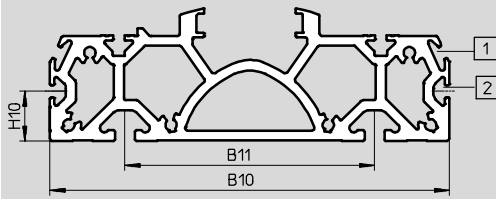
Technical data

FESTO

Dimensions

Download CAD data → www.festo.com

Profile

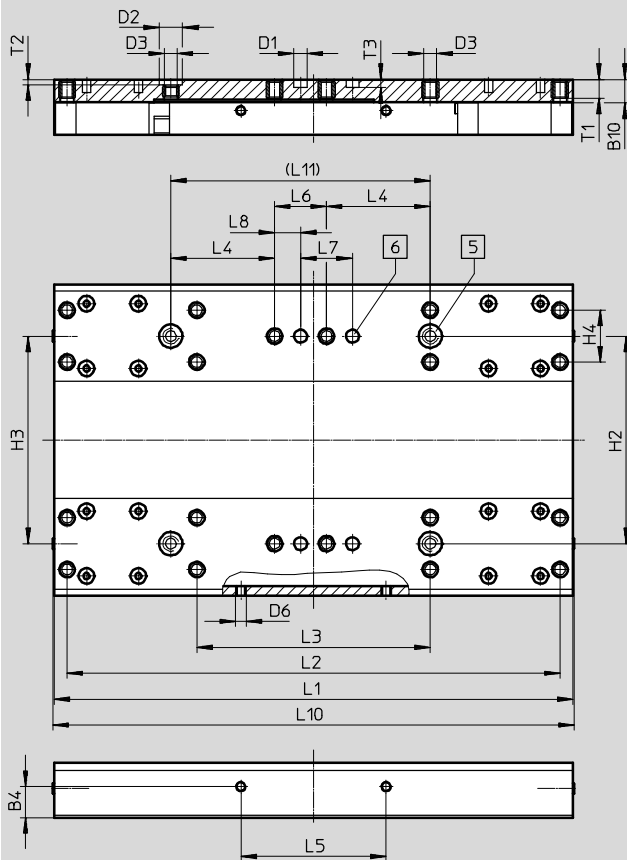


- 1 Sensor slot for proximity sensor
- 2 Mounting slot for slot nut

Size	B10	B11	H10
125	122	80	20
160	160	100	20
220	220	140	20

GK – Standard slide

Size 125



- 5 Hole for centring sleeve ZBH
- 6 Hole for centring pin ZBS

Size	B4	B10	D1 Ø	D2 Ø	D3	D6	H2	H3	H4	L1	L2	L3
	±0.1		H7	H7			±0.03	±0.05	±0.1	±0.1	±0.2	±0.1
125	12	9	5	9	M5	M4	80	80	20	200	190	90

Size	L4	L5	L6	L7	L8	L10	L11	T1	T2	T3
	±0.1	±0.2	±0.1	±0.03	±0.1		±0.03		+0.1	+0.1
125	40	56	20	20	10	202	100	7.8	2.1	3.1

Toothed belt axes EGC-HD-TB, with heavy-duty guide

Technical data

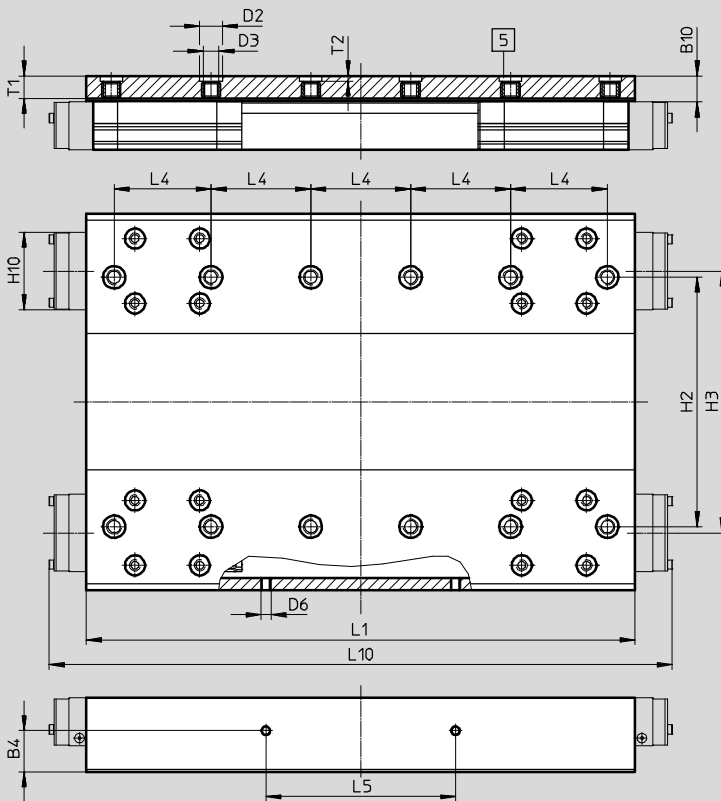
FESTO

Dimensions

Download CAD data → www.festo.com

GK – Standard slide/GP – Standard slide, protected

Size 160



5 Hole for centring sleeve ZBH

Size	B4	B10 ^{*)}	D2 Ø H7	D3	D6	H2	H3
160	±0.1 16.5	10.5	9	M6	M4	±0.03 100	±0.05 105

Size	H10 ^{*)}	L1	L4	L5	L10 ^{*)}	T1	T2
160	31	±0.1 220	±0.03 40	±0.1 76	250	9	+0.1 2.1

^{*)} Protected version

Toothed belt axes EGC-HD-TB, with heavy-duty guide

Technical data

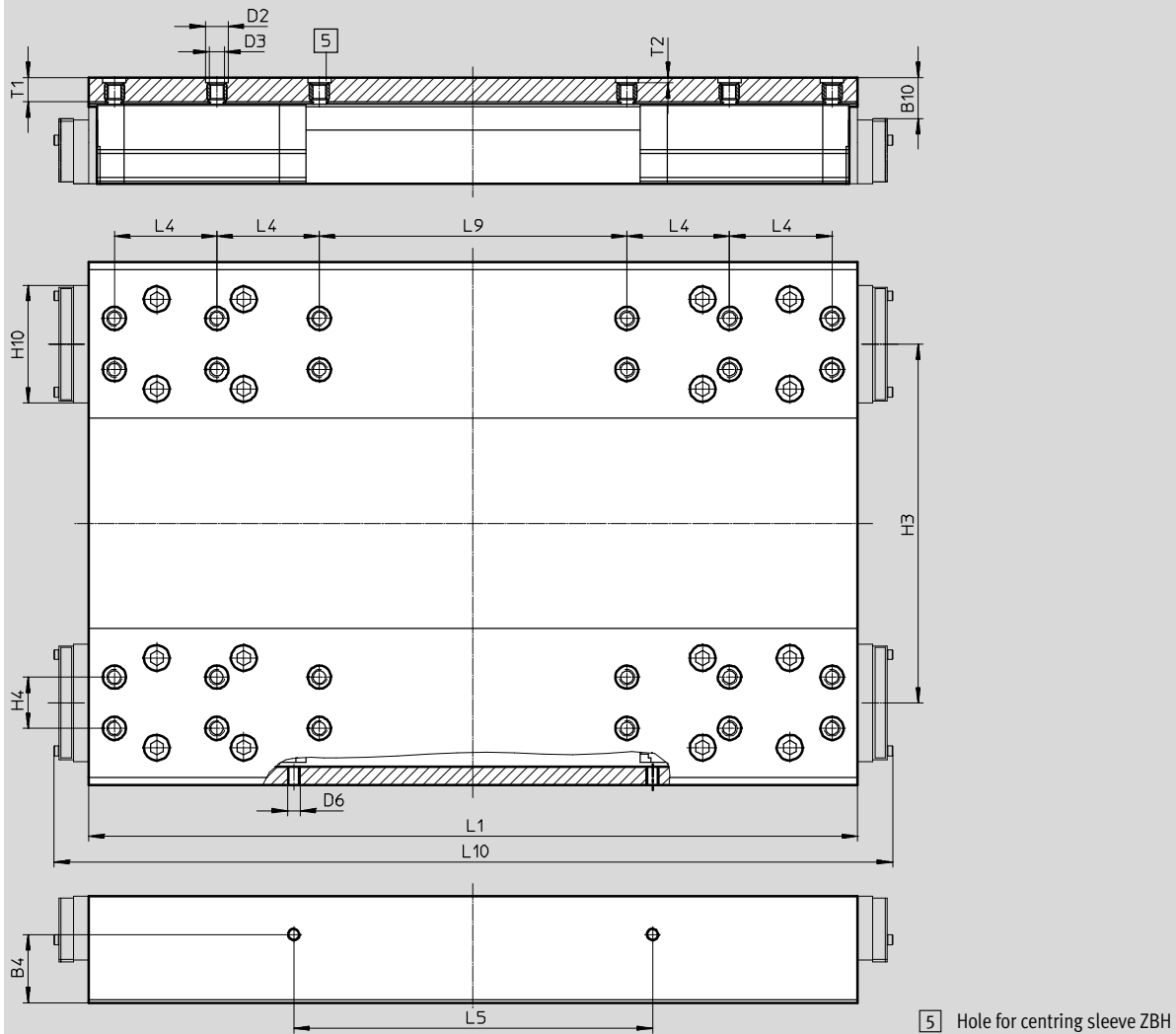
FESTO

Dimensions

Download CAD data → www.festo.com

GK – Standard slide/GP – Standard slide, protected

Size 220



Size	B4	B10 ^{*)}	D2 Ø H7	D3	D6	H3	H4	H10 ^{*)}
220	±0.1	16	9	M6	M5	±0.05	±0.03	45.95

Size	L1	L4	L5	L9	L10 ^{*)}	T1	T2
220	±0.1	±0.03	±0.1	±0.03	328	9.5	2.1

^{*)} Protected version

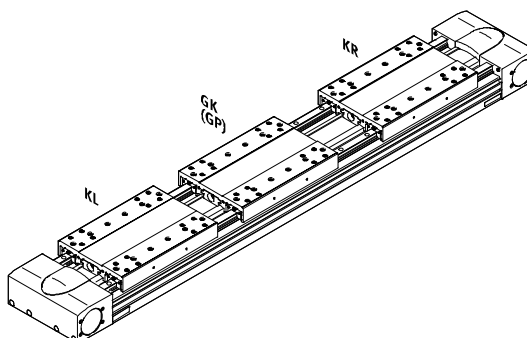
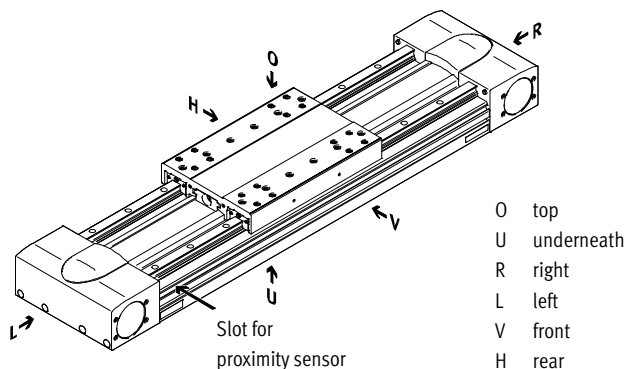
Toothed belt axes EGC-HD-TB, with heavy-duty guide

Ordering data – Modular products

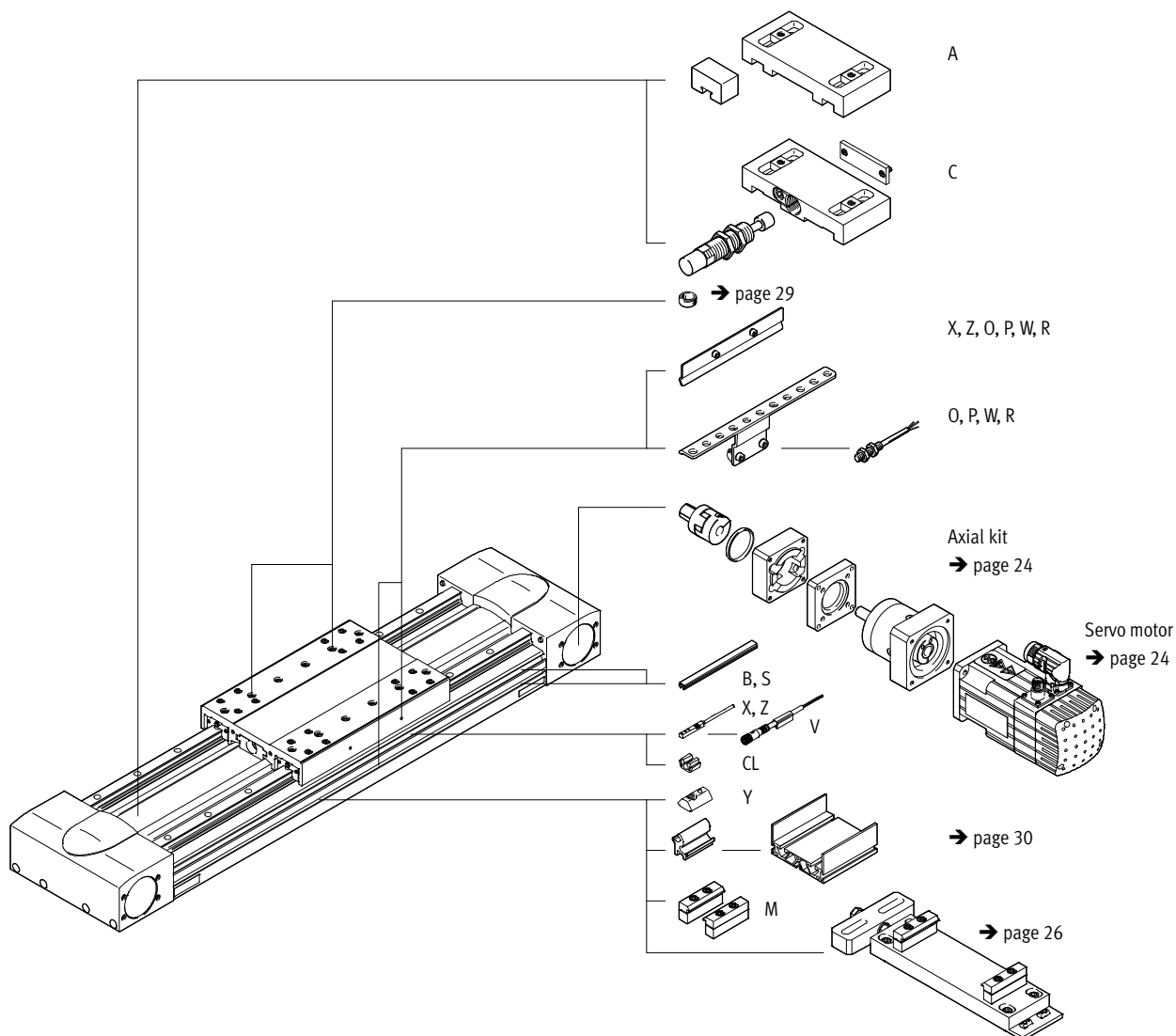
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Order code

Mandatory data



Accessories



Toothed belt axes EGC-HD-TB, with heavy-duty guide

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Ordering data – Modular products

Ordering table									
Size		125	160	220	Condi- tions	Code	Enter code		
M	Module No.		556823	556824	556825				
	Design		Linear axis				EGC	EGC	
	Guide		Heavy-duty guide				-HD	-HD	
	Size		125	160	220		-...	-...	
	Stroke [mm]		50 ... 3000	50 ... 5000	50 ... 4750	1	-...	-...	
	Function		Toothed belt				-TB	-TB	
	Stroke reserve [mm]		0 ... 999 (0 = no stroke reserve)			1	-...H		
	Slide		Standard slide				-GK		
			Standard slide, protected			-GP			
O	Additional slide		Left		Additional slide, standard, on left		2	-KL	
			Right		Additional slide, standard, on right		2	-KR	
	Accessories		Accessories enclosed separately				ZUB-	ZUB-	
	Profile mounting		1 ... 50				...M		
	Cover		Mounting slot		1 ... 50 (1 = 2x 500 mm pieces)		4	...B	
			Sensor slot		1 ... 50			...S	
	Slot nut for mounting slot		1 ... 99			4	...Y		
	Proximity sensor (SIES), inductive, slot type 8, PNP, incl. switch lug		N/O contact, 7.5 m cable		1 ... 6			...X	
			N/C contact, 7.5 m cable		1 ... 6			...Z	
	Emergency buffer with retainer		1 ... 2			3	...A		
	Shock absorber with retainer		1 ... 2			3	...C		
	Proximity sensor (SIEN), inductive, M8, PNP, incl.		N/O contact, 2.5 m cable		1 ... 99			...O	
			N/C contact, 2.5 m cable		1 ... 99			...P	
	switch lug with sensor		N/O contact, plug M8		1 ... 99			...W	
	bracket		N/C contact, plug M8		1 ... 99			...R	
	Connecting cable, M8, 3-wire, 2.5 m		1 ... 99				...V		
	Cable clip		10, 20, 30, 40, 50, 60, 70, 80, 90				...CL		
	Operating instructions		Express waiver - no user documentation to be included (already available) (operating instructions in PDF format are available free of charge on the Internet at http://www.festo.com)					-DN	

- 1 -... The sum of the stroke length in mm and 2x the stroke reserve in mm must not exceed the maximum stroke length in mm.
- 2 KL, KR If the protected slide variant (GP) is selected, then the additional slide (KL, KR) is also protected.
- 3 ... A, ... C Cannot be combined with slide GP.
- 4 B, Y Scope of delivery with size 160 for both slot sizes (→ page 34).

- M Mandatory data
- O Options

Order code

EGC - HD - TB -

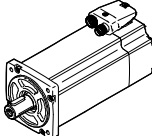
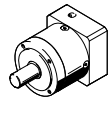
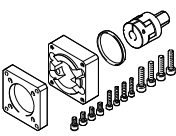
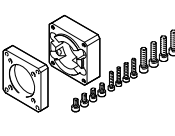
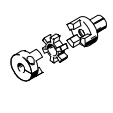
Toothed belt axes EGC-HD-TB, with heavy-duty guide

FESTO

Accessories

 Note

Depending on the combination of motor and drive, it may not be possible to reach the maximum feed force of the drive.

Permissible axis/motor combinations with axial kit – With gear unit					Technical data → Internet: eamm-a
Motor ¹⁾	Gear unit	Axial kit	Axial kit comprises:		
			Motor flange	Coupling	Centring ring
					
Type	Type	Part No. Type	Part No. Type	Part No. Type	Part No. Type
EGC-HD-125					
With servo motor					
EMMS-AS-55-...	EMGA-60-P-G...-SAS-55	1190076 EAMM-A-M43-60G	1597579 EAMF-A-43D-60G/H	558001 EAMD-32-32-11-16X20	575962 EAML-43-4-43
EMME-AS-60-...	EMGA-60-P-G...-EAS-60	1456612 EAMM-A-M43-60H	1597579 EAMF-A-43D-60G/H	1377840 EAMD-32-32-14-16X20	575962 EAML-43-4-43
EMMS-AS-70-...	EMGA-60-P-G...-SAS-70	1190076 EAMM-A-M43-60G	1597579 EAMF-A-43D-60G/H	558001 EAMD-32-32-11-16X20	575962 EAML-43-4-43
With stepper motor					
EMMS-ST-57-...	EMGA-60-P-G...-SST-57	1190076 EAMM-A-M43-60G	1597579 EAMF-A-43D-60G/H	558001 EAMD-32-32-11-16X20	575962 EAML-43-4-43
With integrated drive					
EMCA-ST-67-...	EMGC-60-...	1456612 EAMM-A-M43-60H	1597579 EAMF-A-43D-60G/H	1377840 EAMD-32-32-14-16X20	575962 EAML-43-4-43
EGC-HD-160					
With servo motor					
EMME-AS-60-...	EMGA-60-P-G...-EAS-60	1456614 EAMM-A-M48-60H	1460111 EAMF-A-48C-60G/H	3420022 EAMD-42-40-14-16X25-U	558031 EAML-48-4-48
EMMS-AS-70-...	EMGA-80-P-G...-SAS-70	1190421 EAMM-A-M48-80G	1190375 EAMF-A-48C-80G	1781043 EAMD-42-40-20-16X25-U	558031 EAML-48-4-48
EMME-AS-80-...	EMGA-80-P-G...-EAS-80	1190421 EAMM-A-M48-80G	1190375 EAMF-A-48C-80G	1781043 EAMD-42-40-20-16X25-U	558031 EAML-48-4-48
EMME-AS-100-...	EMGA-80-P-G...-SAS-100	1190421 EAMM-A-M48-80G	1190375 EAMF-A-48C-80G	1781043 EAMD-42-40-20-16X25-U	558031 EAML-48-4-48
EMMS-AS-100-...	EMGA-80-P-G...-SAS-100	1190421 EAMM-A-M48-80G	1190375 EAMF-A-48C-80G	1781043 EAMD-42-40-20-16X25-U	558031 EAML-48-4-48
With stepper motor					
EMMS-ST-87-...	EMGA-80-P-G...-SST-87	1190421 EAMM-A-M48-80G	1190375 EAMF-A-48C-80G	1190375 EAMF-A-48C-80G	1190375 EAMF-A-48C-80G
With integrated drive					
EMCA-ST-67-...	EMGC-60-...	1456614 EAMM-A-M48-60H	1460111 EAMF-A-48C-60G/H	3420022 EAMD-42-40-14-16X25-U	558031 EAML-48-4-48
EGC-HD-220					
With servo motor					
EMME-AS-100-...	EMGA-120-P-G...-SAS-100	1190774 EAMM-A-M80-120G	1190702 EAMF-A-80A-120G	1781045 EAMD-56-46-25-23X27-U	1209006 EAML-80-6-80
EMMS-AS-100-...	EMGA-120-P-G...-SAS-100	1190774 EAMM-A-M80-120G	1190702 EAMF-A-80A-120G	1781045 EAMD-56-46-25-23X27-U	1209006 EAML-80-6-80
EMMS-AS-140-...	EMGA-120-P-G...-SAS-140	1190774 EAMM-A-M80-120G	1190702 EAMF-A-80A-120G	1781045 EAMD-56-46-25-23X27-U	1209006 EAML-80-6-80

¹⁾ The input torque must not exceed the maximum permissible transferable torque of the axial kit.

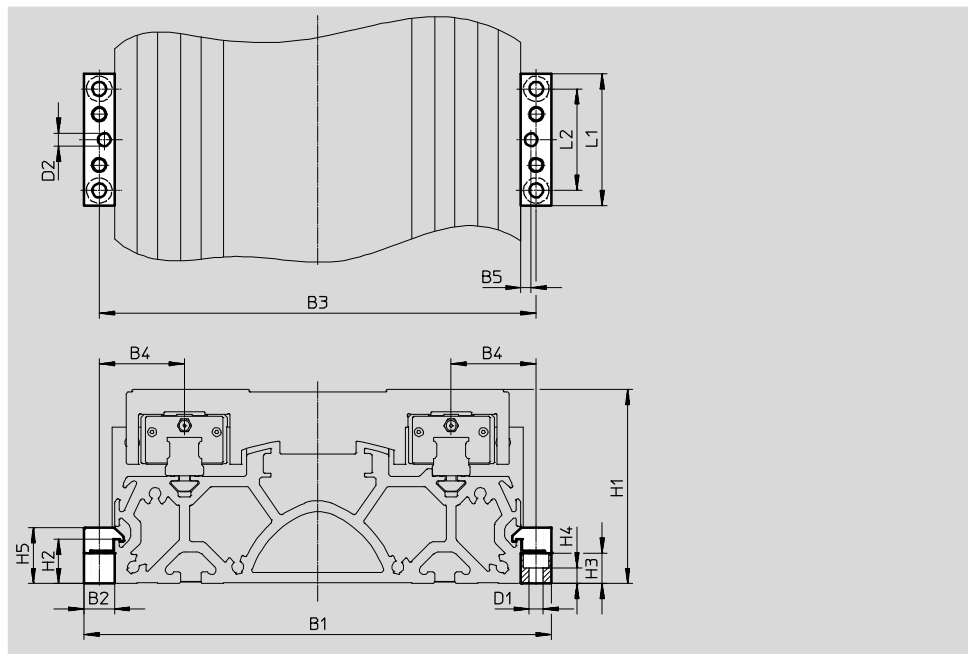
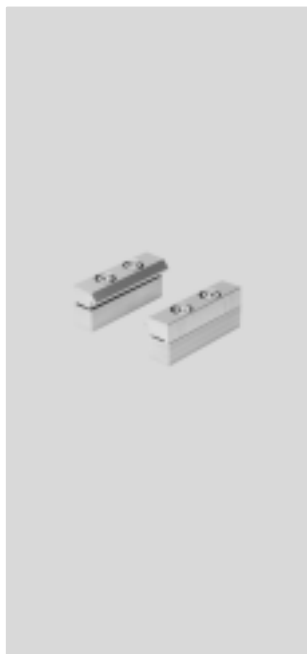
Toothed belt axes EGC-HD-TB, with heavy-duty guide

FESTO

Accessories

Profile mounting MUE
(order code M)

Materials:
Anodised aluminium
RoHS-compliant



Dimensions and ordering data

For size	B1	B2	B3	B4	B5	D1 Ø	D2 Ø H7	H1	H2
125	146	12	134	27	4	5.5	5	64	17.5
160	184	12	172	33.5	4	5.5	5	76.5	17.5
220	258	19	239	49.5	4	9	5	111.5	16

For size	H3	H4	H5	L1	L2	Weight [g]	Part No.	Type
125	12	6.2	22	52	40	80	558043	MUE-70/80
160	12	6.2	22	52	40	80	558043	MUE-70/80
220	14	5.5	29.5	90	40	290	558044	MUE-120/185

Toothed belt axes EGC-HD-TB, with heavy-duty guide

Accessories

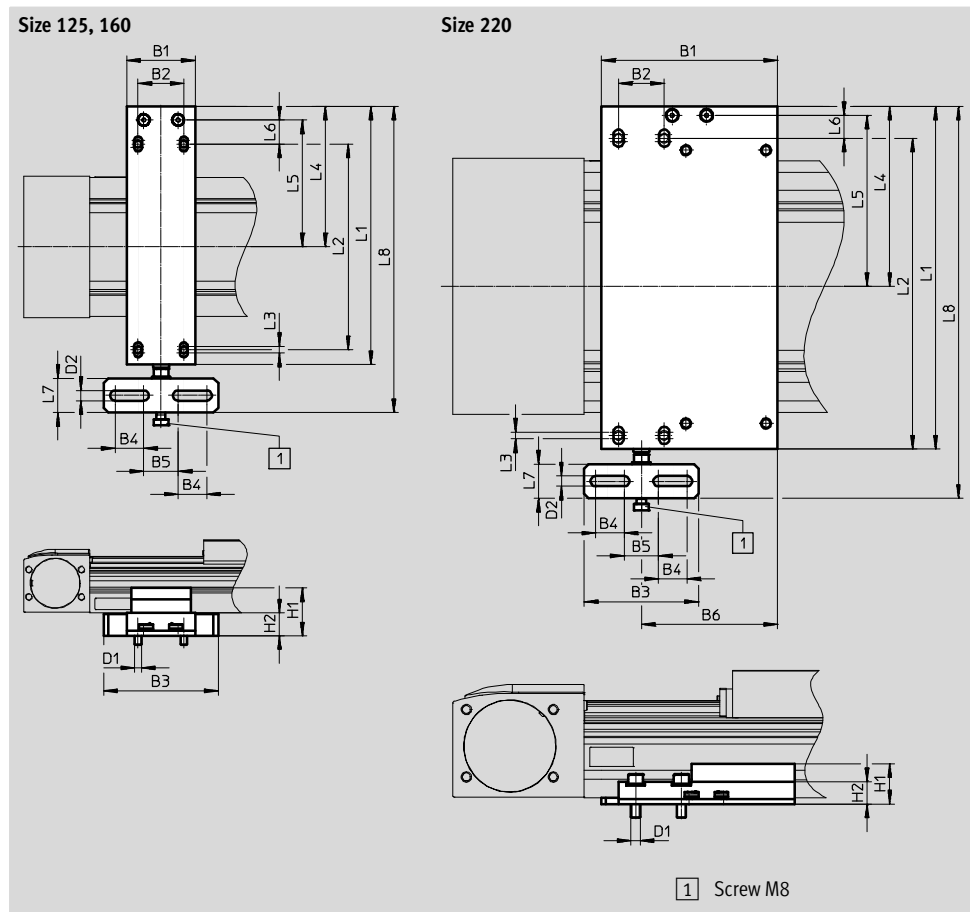
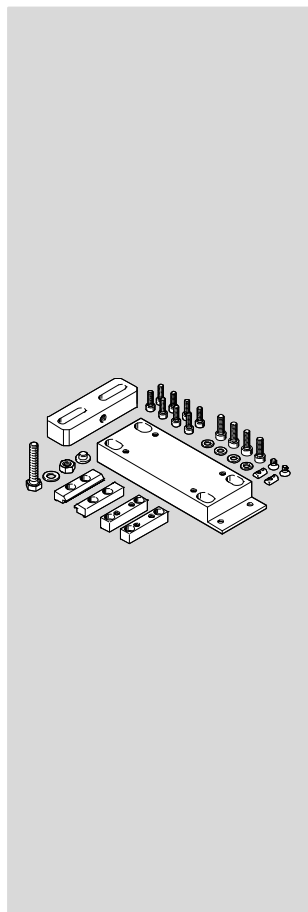
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Adjusting kit EADC-E16

Materials:

Wrought aluminium alloy

RoHS-compliant



Dimensions and ordering data												
For size	B1	B2	B3	B4	B5	B6	D1	D2	H1	H2	L1	L2
125	60	40	100	25	30	–	M6	9	42	20	226	180
160	60	40	100	25	30	–	M6	9	44	22	266	220
220	154	40	100	25	30	119	M8	9	35,1	19,6	300	260

For size	L3	L4	L5	L6	L7	L8	Weight [g]	Part-No.	Type
125	6	123	111	21	30	308	974	8047580	EADC-E16-125-E14
160	6	143	131	21	30	343	1189	8047581	EADC-E16-160-E14
220	6	157,7	149,7	20	30	343	1500	8047582	EADC-E16-220-E14

Toothed belt axes EGC-HD-TB, with heavy-duty guide

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Accessories

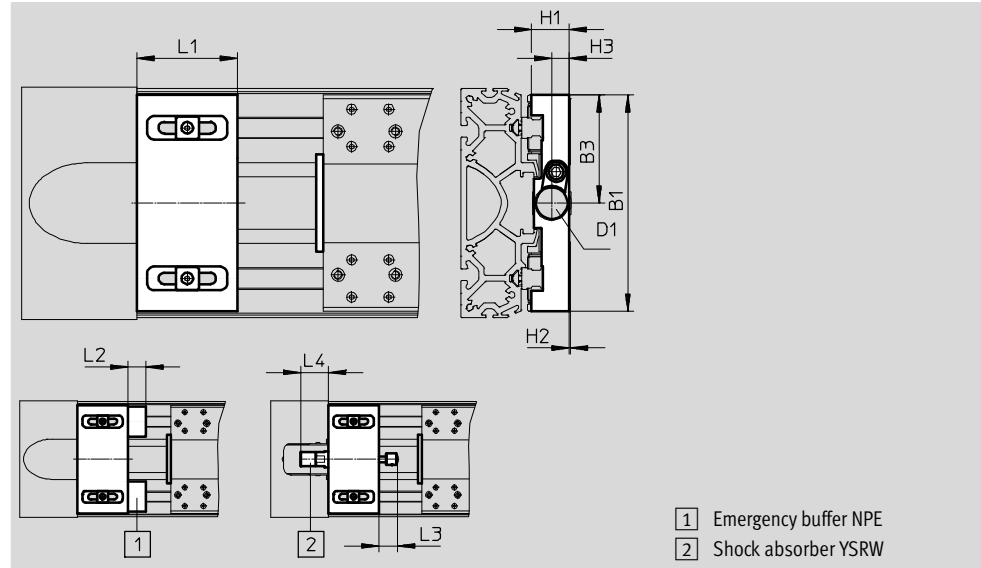
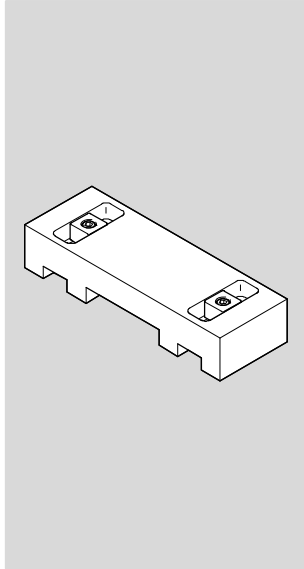
Shock absorber retainer, retainer EAYH

Emergency buffer NPE → page 29

Shock absorber YSRW → page 29
(order code A or C)

Materials:
Anodised aluminium
RoHS-compliant

Cannot be used in combination with
the variants GP.



Dimensions and ordering data													
For size	B1	B3	D1	H1	H2	H3	L1	L2	L3	L4 Min.	Weight [g]	Part No.	Type
Shock absorber retainer													
125	120	60	M16x1	19.8	0.4	9.7	50	–	20	36	286	1653251	EAYH-L2-125
160	150.7	75.3	M22x1.5	26.2	0.8	12.3	70	–	26	38.5	622	1653250	EAYH-L2-160
220	204	102	M26x1.5	38.7	0.1	15	70	–	34	63.5	1218	1653253	EAYH-L2-220
Retainer for emergency buffer													
125	120	–	–	19.8	0.4	–	50	17	–	–	260	1662803	EAYH-L2-125-N
160	150.7	–	–	26.2	0.8	–	70	25	–	–	617	1669259	EAYH-L2-160-N
220	204	–	–	38.7	0.1	–	70	30	–	–	1195	1669260	EAYH-L2-220-N

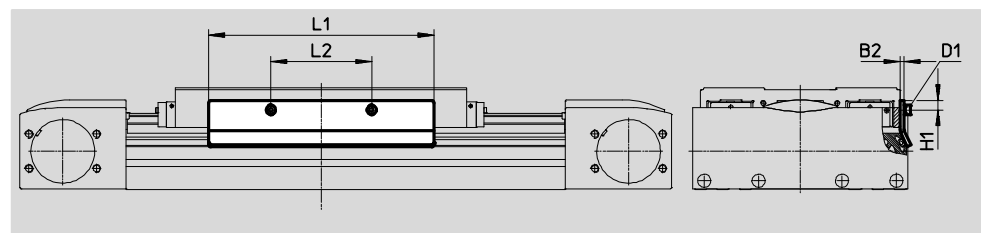
Switch lug SF-EGC-HD-1

For sensing via proximity sensor

SIES-8M

(order code X or Z)

Materials:
Galvanised steel
RoHS-compliant



Dimensions and ordering data							
For size	B2	D1	H1	L1	L2	Weight [g]	Part No. Type
125	2	M4x8	7.8	150	56	70	570027 SF-EGC-HD-1-125
160	3	M4x8	7.3	170	76	160	1645872 SF-EGC-HD-1-160
220	3	M5x10	11.5	250	140	310	1645866 SF-EGC-HD-1-220

Toothed belt axes EGC-HD-TB, with heavy-duty guide

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Accessories

Switch lug SF-EGC-HD-2

For sensing via proximity sensor
SIEN-M8B (order code O, P, W or R) or
SIES-8M (order code X or Z)

Materials:

Galvanised steel

RoHS-compliant



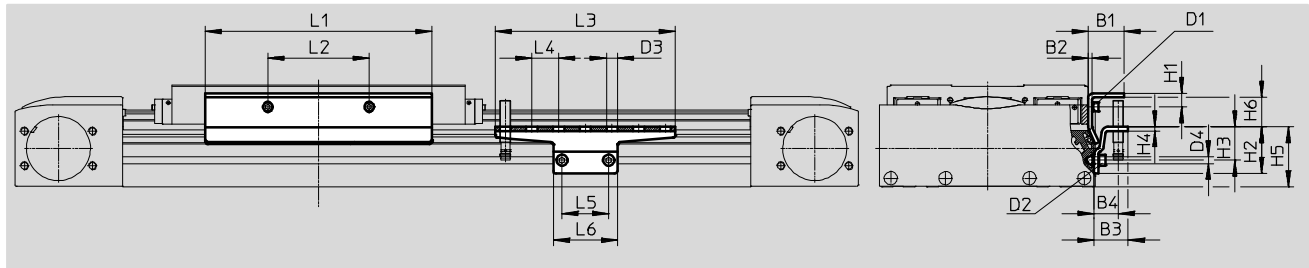
Sensor bracket HWS-EGC

For proximity sensor SIEN-M8B
(order code O, P, W or R)

Materials:

Galvanised steel

RoHS-compliant



Dimensions and ordering data										
For size	B1	B2	B3	B4	D1	D2	D3 Ø	D4 Ø	H1	H2
125	24	2	25.5	18	M4x8	M5x8	8.4	5.2	9	35
160	27	3	25.5	18	M4x8	M5x8	8.4	5.2	10.3	35
220	31	3	25.5	18	M5x10	M5x14	8.4	5.2	11.5	65

For size	H3	H4	H5	H6	L1	L2	L3	L4	L5	L6
125	25	3	45	14	150	56	135	20	35	48
160	25	3	45	22.2	170	76	135	20	35	48
220	55	3	75	18.4	250	140	215	20	35	48

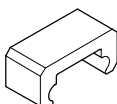
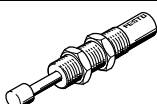
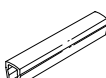
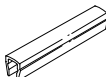
For size	Weight [g]	Part No.	Type
Switch lug			
125	122	570030	SF-EGC-HD-2-125
160	261	1645865	SF-EGC-HD-2-160
220	430	1645868	SF-EGC-HD-2-220

For size	Weight [g]	Part No.	Type
Sensor bracket			
125	110	558057	HWS-EGC-M5
160	110	558057	HWS-EGC-M5
220	217	570365	HWS-EGC-M8-B

Toothed belt axes EGC-HD-TB, with heavy-duty guide

Accessories

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Ordering data						
	For size	Comment	Order code	Part No.	Type	PU ¹⁾
Emergency buffer NPE						
	125	Use in combination with retainer EAYH	A	1662475	NPE-125	1
	160			1672593	NPE-160	
	220			1672598	NPE-220	
Shock absorber YSRW						
	125	Use in combination with shock absorber retainer EAYH	C	191196	YSRW-12-20	1
	160			191197	YSRW-16-26	
	220			191198	YSRW-20-34	
Slot nut NST						
	125, 160 ³⁾	For mounting slot	Y	150914	NST-5-M5	1
				8047843	NST-5-M5-10	10
				8047878	NST-5-M5-50	50
	160 ⁴⁾ , 220	For mounting slot	Y	150915	NST-8-M6	1
				8047868	NST-8-M6-10	10
8047869				NST-8-M6-50	50	
Centring pin/sleeve ZBS/ZBH ²⁾						
	125	For slide	–	150928	ZBS-5	10
	125 ... 220			150927	ZBH-9	
Slot cover ABP						
	125, 160 ³⁾	For mounting slot Every 0.5 m	B	151681	ABP-5	2
	160 ⁴⁾ , 220			151682	ABP-8	
Slot cover ABP-S						
	125 ... 220	For sensor slot Every 0.5 m	S	563360	ABP-5-S1	2
Clip SMBK						
	125 ... 220	For sensor slot, for attaching the proximity sensor cables	CL	534254	SMBK-8	10

- 1) Packaging unit quantity
2) 2 centring pins/sleeves included in the scope of delivery of the axis
3) For mounting slot at side
4) For mounting slot underneath

Toothed belt axes EGC-HD-TB, with heavy-duty guide

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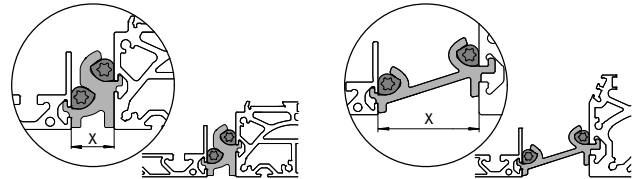
Accessories

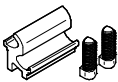
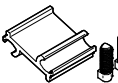
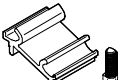
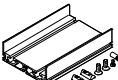
Mounting options between axis and support profile

Depending on the adapter kit, the spacing between the axis and the support profile is:
x = 20 mm or 50 mm

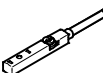
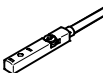
The support profile must be mounted using at least 2 adapter kits. For longer strokes, an adapter kit must be used every 500 mm.

Example:



Ordering data					
	For size	Comment	Part No.	Type	PU ¹⁾
Adapter kit DHAM					
	160	- For mounting the support profile on the axis - Spacing between axis and profile is 20 mm	562241	DHAM-ME-N1-CL	1
	220		562242	DHAM-ME-N2-CL	
	125, 160	- For mounting the support profile on the axis - Spacing between axis and profile is 50 mm	574560	DHAM-ME-N1-50-CL	
	220		574561	DHAM-ME-N2-50-CL	
Support profile HMIA					
	70 ... 120	For guiding an energy chain	539379	HMIA-E07-	1

1) Packaging unit quantity

Ordering data – Proximity sensor for T-slot, inductive							Technical data → Internet: sies
	Type of mounting	Electrical connection	Switching output	Cable length [m]	Order code	Part No.	Type
N/O contact							
	Insertable in the slot from above, flush with the cylinder profile	Cable, 3-wire	PNP	7.5	X	551386	SIES-8M-PS-24V-K-7,5-OE
		Plug connector M8x1, 3-pin		0.3	–	551387	SIES-8M-PS-24V-K-0,3-M8D
		Cable, 3-wire	NPN	7.5	–	551396	SIES-8M-NS-24V-K-7,5-OE
		Plug connector M8x1, 3-pin		0.3	–	551397	SIES-8M-NS-24V-K-0,3-M8D
N/C contact							
	Insertable in the slot from above, flush with the cylinder profile	Cable, 3-wire	PNP	7.5	Z	551391	SIES-8M-PO-24V-K-7,5-OE
		Plug connector M8x1, 3-pin		0.3	–	551392	SIES-8M-PO-24V-K-0,3-M8D
		Cable, 3-wire	NPN	7.5	–	551401	SIES-8M-NO-24V-K-7,5-OE
		Plug connector M8x1, 3-pin		0.3	–	551402	SIES-8M-NO-24V-K-0,3-M8D

Toothed belt axes EGC-HD-TB, with heavy-duty guide

Accessories

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Ordering data – Proximity sensors M8 (round design), inductive							Technical data ➔ Internet: sien
	Electrical connection	LED	Switching output	Cable length [m]	Order code	Part No.	Type
N/O contact							
	Cable, 3-wire	■	PNP	2.5	O	150386	SIEN-M8B-PS-K-L
			NPN	2.5	–	150384	SIEN-M8B-NS-K-L
	Plug connector M8x1, 3-pin	■	PNP	–	W	150387	SIEN-M8B-PS-S-L
			NPN	–	–	150385	SIEN-M8B-NS-S-L
N/C contact							
	Cable, 3-wire	■	PNP	2.5	P	150390	SIEN-M8B-PO-K-L
			NPN	2.5	–	150388	SIEN-M8B-NO-K-L
	Plug connector M8x1, 3-pin	■	PNP	–	R	150391	SIEN-M8B-PO-S-L
			NPN	–	–	150389	SIEN-M8B-NO-S-L

Ordering data – Connecting cables					Technical data → Internet: nebu
	Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type
	Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	159420	SIM-M8-3GD-2,5-PU
			2.5	541333	NEBU-M8G3-K-2.5-LE3
			5	541334	NEBU-M8G3-K-5-LE3
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541338	NEBU-M8W3-K-2.5-LE3
			5	541341	NEBU-M8W3-K-5-LE3